CITY OF REDDING

FI-093

ELECTRIC DEPARTMENT
760 Parkview Avenue, Redding, CA 96001-3396
P.O. Box 496071, Redding, CA 96049-6071
916.224.4300 FAX 916.224.4389

97 JUL 28 PM 12:51

DWR WAREHOUSE

July 25, 1997

CALFED Bay-Delta Program Office
attn. 1997 Category III RFP Responses
1416 Ninth Street - ~~Suite 1155~~
Sacramento, CA 95814

Dear CALFED Program Administrators:

Enclosed you will find ten copies of the City of Redding's response to CALFED's 1997 Category III Request for Proposals (RFP) for funding of a feasibility study on the enhancement of native anadromous fish populations in the upper Sacramento River mainstem.

The City of Redding would like to thank you for this opportunity to respond to the RFP and for all of the work put forward by you and the numerous parties involved in this regard. These efforts are greatly appreciated by all of the respondents, participants, and beneficiaries of the CALFED program.

Enclosed you will also find two copies of receipt confirmation notice to confirm your timely receipt of this submittal. If the conditions for delivery and receipt that are included in this notice have been met and the proposal has been accepted for consideration, please sign and date the form and return one copy in the attached self-addressed stamped envelope.

Thank you in advance for your attention to this matter.

Sincerely,

Bryan Cope

Bryan Cope
Resource Planner
City of Redding

Enclosures

c: Phil Perry, Assistant City Manager

Receipt Confirmation

I, the undersigned, hereby acknowledge receipt of ten copies of the City of Redding's response to the CALFED 1997 Category III RFP titled, *Redding Area Anadromous Fish Enhancement Program.*

The submittal was ~~received~~ by this office prior to 4:00 p.m., July 28, 1997 and thereby is accepted for further consideration by the CALFED Program.

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CALFED Bay-Delta Program Representative

I. EXECUTIVE SUMMARY

The Redding Area Anadromous Fish Enhancement Program (Program) is being considered and sponsored by the City of Redding (Redding). The Program is a long-term venture that will begin with detailed environmental, engineering and economic assessments and an overall feasibility study of the opportunities to enhance anadromous salmonid fish production in the upper Sacramento River. It is envisioned that techniques such as egg planting, instream hatch boxes, and/or artificial spawning channels may provide supplemental and complementary opportunities to enhance the restoration of natural production of chinook salmon and steelhead trout in the Redding area.

Program studies will include different site evaluations to optimize the location and the type of facilities best suited to restore and enhance populations of winter run chinook salmon as well as other native anadromous fish species. A primary consideration for the Program will be to increase the limited availability and improve the quality of existing anadromous fish spawning habitat in the upper mainstem Sacramento River.

Redding is requesting $250,000 from the CALFED Bay-Delta Ecosystem Restoration Program to fund the initial phase of the Program to evaluate the merits of the Redding Area Anadromous Fish Enhancement Program's construction in the Redding area. Issues to be addressed in the initial feasibility study would include, but not be limited to:

- Site Availability and Suitability Assessments
- Water Quality, Temperature, and Availability Evaluations
- Gravel Surveys and Inventories
- Salmonid Egg Incubation and Hatching Technology Review
- Economic Feasibility
- Preliminary Design Criteria and Drawings
- Educational Opportunity Evaluations
- Compatibility with Ongoing Resource Enhancement Programs

The Phase I feasibility studies will be conducted to ensure that the Program is feasible and consistent with the CALFED program's objectives and principles. Redding also envisions the Program being complementary to other existing and future state and federal fish population enhancement programs, such as the U.S. Fish and Wildlife Service's Anadromous Fish Restoration Program (AFRP), the Coleman National Fish Hatchery and a winter run chinook salmon hatchery being considered at or near the base of Shasta Dam.

It is expected that the Phase I studies will require six months to complete from the time they are begun. The findings of the studies would be used to formulate one or more proposed fish enhancement projects which Redding would expand upon and develop for Phase II of the Program. Future funding for Phase II and/or Phase III of the Program will be achieved through CALFED and/or other public and private sources.

This Program is consistent with the objectives of the CALFED program to enhance the population of one or more priority species, including an endangered salmon species. It would benefit the overall health of the Central Valley and Bay-Delta ecosystem. An additional third-party, benefit associated with this Program would be the development of an educational component for public use and enjoyment. Such a facility could include an on-site education and demonstration element to provide an understanding of anadromous fish ecology including: habitat requirements; fish life cycles; environmental stressors and the social, cultural,

and economic importance of these species to California. This educational facility would be a very strong addition and complement to the $42 million Turtle Bay Museum and Redding Arboretum presently being developed along the Sacramento River in Redding. Turtle Bay has a significant emphasis on environmental programs and natural resources in the Sacramento River basin watershed. A native fish demonstration program would provide inherent benefits to the Turtle Bay facilities and the community as a whole.

The Program will focus on evaluations of existing public lands that would not require any condemnation of property for the Program's facilities. If a privately owned site is identified as the optimal location for the fish enhancement facility, Redding would be prepared to secure and/or negotiate the use of the necessary property only if it was owned and controlled by "willing landowners."

Redding is the local agency with the primary responsibility of ensuring the continued vivacity and strength of the Redding area. As part of this obligation, Redding believes an anadromous fish enhancement and educational program facility would significantly contribute to the recovery of native fish populations (including an endangered species.) In addition, public education, awareness and appreciation of our fisheries would be increased and the local and statewide economies would benefit also. With these and other potential benefits, Redding believes an application for the funding of this Program by CALFED is reasonable and very compatible with the overall goals and objectives of the CALFED program.

In Phase I of the Program, Redding will provide oversight and control of the technical components of the studies and evaluations. The environmental, economic and technical assessments noted above will be performed by qualified individuals and/or consulting firms who are trained and specialize in engineering, environmental, and economic feasibility studies. These parties have not been identified or contracted as yet, pending the potential funding of the Program. Any future contracts for work in this matter will be subject to the competitive procurement processes under existing municipal contracting guidelines to ensure that the most thorough and cost-effective results are achieved. The findings and recommendations from these Phase I studies will be subject to review and evaluation by all interested parties, including state and federal agencies.

Redding is a growing community that strives to provide its citizens with a high quality of life, including well-rounded and enriching opportunities to become more involved and knowledgeable of the area's environmental resources. The current construction of the Turtle Bay Museum and Redding Arboretum on the Sacramento River is a primary example of such activity. An anadromous fish enhancement facility and educational program could be very compatible with Redding's goals and objectives to enhance the City's appeal and vitality. Support for further study and review of the Program from local government agencies is very strong.

Redding firmly believes that the potential benefits of an anadromous fish enhancement and educational program and facility on the mainstem of the upper Sacramento River are enormous--not only to the ecosystem but also to the quality of life for residents in the Redding area. This Program would be focused on CALFED priority species and is consistent with the overall goals and objectives of the CALFED program. The initial steps, or Phase I, of the Program, as proposed herein, involve evaluating opportunities for a fish enhancement project and are essential to the ultimate development of this Program.

II. **TITLE PAGE**

Redding Area Anadromous Fish Enhancement Program

Sponsored by:
City of Redding

Principal Investigator:	Bryan Cope Resource Planner
Address:	City of Redding 760 Parkview Avenue Redding, CA 96001 916 224 4361 - Phone 916 224 4389 - FAX
Type of Organization:	Municipal Corporation
Tax Status:	Exempt, Local Government
Tax Identification No.	94-6000401
Technical and Financial Contact:	Same as above
RFP Program Group:	Group 3 - Planning, Non-Construction Habitat Restoration, Design Activities, Educational Programs, etc.

III. PROGRAM DESCRIPTION

The Redding Area Anadromous Fish Enhancement Program will be located in Shasta County and focus on natural processes that may be available to provide supplemental, quality habitats for the propagation of anadromous fish in the upper Sacramento River. Because of many unique environmental opportunities in and around the Redding area, Redding believes that an instream, salmonid production enhancement and demonstration program is a very viable opportunity to supplement and assist in the restoration of the native anadromous fish populations in the Sacramento River and the Bay-Delta ecosystem.

As an example, there is a substantial amount of existing gravel suitable for salmonid spawning in the upper Sacramento River, in and around the Redding area. The California Department of Fish and Game (DFG) and Department of Water Resources (DWR) currently provide supplemental spawning gravels to the Sacramento River at various locations in the Redding area, including points within the City of Redding. Gravel for the construction of spawning redds are a critical requirement for quality anadromous fish habitats. Redding expects that there may be a significant opportunity to create valuable, natural habitats for spawning, egg incubation, and fry rearing by establishing a program to either: 1) plant surplus Coleman National Fish Hatchery (CNFH), or other hatcheries', egg production; or 2) artificially incubate salmonid eggs in instream devices.

A primary desire of Redding is for the Program to be complementary and to augment the ongoing efforts of the CNFH and DFG's, USFWS', and National Marine Fisheries Service's (NMFS) ongoing review of a potential winter run chinook salmon hatchery at or near the base of Shasta Dam. Redding has considered the possibilities of using surplus eggs from one or both of these hatcheries to plant and incubate eggs within newly created gravel beds and allowing the resulting fry and juvenile fish to imprint on the natural environment of the upper Sacramento River. This is one example of the potential use of natural processes to supplement and enhance the natural anadromous fish populations in the upper Sacramento River. Other opportunities may include small scale, artificial spawning channels and/or in stream or along-stream hatch box technologies. Redding believes that these techniques should be evaluated for their feasibility to enhance anadromous fish populations and their recovery in the upper Sacramento River.

Salmonid egg planting projects have proven successful in the recovery and rehabilitation of pink, chum, and sockeye salmon rivers in Alaska (Jones, et.al., 1977: White, 1986). Additionally, evaluation studies with chinook salmon eggs were conducted by DFG in Mill Creek, in Tehama County in the 1950s. With the installation of the Temperature Control Device (TCD) at Shasta Dam in 1997, the upper Sacramento River in the Redding area now provides optimal water temperature conditions for salmonid egg incubation. The Program would evaluate the opportunity to take advantage these beneficial conditions through the use of supplementary production techniques.

Development of the Redding Area Anadromous Fish Enhancement Program is currently structured as a three-phase Program. This proposal requests funding for Phase I of the Program.

Phase I. Initial Feasibility Study and Assessments

- Site availability and suitability assessments, including:
  - Water quality, temperature, and availability evaluations
  - Gravel inventory / surveys
  - Logistical requirements for obtaining and planting of surplus salmonid eggs
- Review of instream egg incubation and hatching technologies
- Economic studies of the Program's costs and benefits
- Preliminary design criteria and drawings
- Assessment of the educational opportunities with the Program
- Preparation of a report on the feasibility study's findings and recommendations, including preliminary design criteria and drawings
- Coordination with other public and private organizations

Phase II. Detailed Development of Recommended Project(s)

- Land acquisition negotiations (if necessary)
- Preparation of preliminary design specifications and drawings for proposed site(s) and facilities
- Proposed educational program and facilities

Phase III. Final development of program and construction

- Environmental impact assessments to meet all state and federal siting and construction requirements
- Final design
- Permitting
- Construction

For Phase I, Redding expects to undertake numerous environmental, biological, engineering and economic studies of the potential development of the Redding Area Anadromous Fish Enhancement Program. The issues to be addressed during Phase I under the CALFED funding program are presented below.

- **Site Availability Assessments** - A detailed review of existing public and private land parcels that could be used as a site for the fish enhancement program facilities.
- **Water Temperature, Quality, and Availability Evaluations** - Review and, if necessary, monitoring of site-specific water quality and temperature to ensure adequacy for salmonid incubation and rearing.
- **Gravel Inventories** - Assessment and survey of the availability, quality, and compatibility of existing gravels and need for additional gravels for use in creating egg planting and hatching beds.

- **Salmonid Egg Incubation and Hatching Technology Review** - Research and determination of the most beneficial methods and technologies being used to enhance salmon populations including egg planting, instream or along-stream hatch boxes, and spawning channel development.
- **Economic Feasibility** - Review of the potential costs of constructing and operating the fish enhancement program.
- **Preliminary Construction Feasibility** - Develop preliminary outlines of facility requirements including acreage and support structures.
- **Educational Opportunity Evaluations** - Determine the most useful and beneficial educational tools for local residents, visitors, and school-age children.

Based on the initial findings of these studies, Redding will work with other agencies and interested parties to determine the viability and value of developing a fish enhancement program or programs which could be developed and refined in Phase II of the Program. Subsequent review will be required thereafter to determine the potential for siting and developing a facility to enhance the populations of native anadromous fish and to educate the public on the native fisheries in the mainstem of the upper Sacramento River. Again, any work beyond the initial Phase I analyses will be funded separately.

III.c/III.d Benefits and Biological/Technical Justification

Currently, winter-run chinook salmon are listed as an endangered species under the Federal Endangered Species Act (ESA) and by the State of California. Critical habitat for this species includes the Shasta County portion of the Sacramento River downstream of Keswick Dam. The proposed Program is within a critically important reach for the spawning salmon and steelhead trout, including winter-run chinook, in the upper mainstem Sacramento River. Spawning surveys have estimated that at least 66% of all endangered winter-run chinook spawned upstream of Anderson in the years 1981-1993 (F. Fisher, CDFG pers. comm.). Most of these fish spawned in the immediate vicinity of Redding.

In addition, spawning surveys have estimated that within the Sacramento River approximately 75% of the spring-run chinook salmon also spawned in this area during the years 1967-1990. Spring-run chinook are proposed to be considered a threatened species by USFWS. Fall- and late fall-run chinook salmon spawning surveys also indicate that 25% of fall-run and more than 43% of late fall-run chinook spawned upstream of Anderson during the years 1984-1994.

It is clear that this reach of the upper Sacramento River is an essential component of spawning and rearing habitat for these CALFED priority species. The proposed Program is intended to complement and supplement actions currently being implemented or planned to recover, restore, and enhance natural populations of anadromous fish in the Redding area.

As mentioned above, the Redding Area Anadromous Fish Enhancement Program will primarily benefit the populations of the three Priority Species, as identified in CALFED's 1997 Implementation Strategy: winter-run; spring-run; and late fall-run chinook salmon in the Sacramento River. However, opportunities to enhance steelhead trout, a species being considered for threatened status by the National Marine Fisheries

Service, are also available. One strength of the Program is its focus on developing and using more "natural" fish rearing techniques in assisting and enhancing the recovery of the salmon than might otherwise be available in a standard hatchery environment. This could allow for more defined and better imprinting for the fry and juvenile fish and thereby increase the potential for greater adult returns in the future.

Despite efforts by the CNFH staff to promote homing of the winter-run chinook salmon to the mainstem of the Sacramento River, the fish originating from the Hatchery have imprinted on Battle Creek, where the Hatchery is located (USFWS proposal on WCS propagation facility, 1997). The temperature of Battle Creek is seasonally sub-optimal for the incubation and fry rearing phases of this salmon species. These problems can cause excessive mortality rates and jeopardize the annual production and eventual recovery of these fish. The U.S. Fish and Wildlife Service has recognized these problems and has begun efforts to secure a location on the mainstem of the Sacramento River for a hatchery to supplement the depleted wild population. Their intent is not to create a salmon run to the hatchery. The relocation of a salmon hatchery on the Sacramento River has been generally agreed upon and accepted by many parties[1] as the most acceptable method of overcoming the imprinting and incubation and rearing temperature problems.

The Redding Area Anadromous Fish Enhancement Program will be used to create or provide an additional rearing site or sites on the mainstem of the Sacramento River and could act to complement the state and federal agencies' recovery and restoration efforts by providing additional, high quality habitat for salmon and steelhead trout. The Program will ultimately help the continuing efforts to recover and increase the wild salmon populations in the Sacramento River.

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[1] Parties concurring with the imprinting and temperature problems and locating a rearing facility on the mainstem of Sacramento River include: DFG, DWR, National Marine Fisheries Service, US Bureau of Reclamation, and UC Davis-Bodega Bay Marine Laboratory

IV. COSTS AND SCHEDULE

Presented below is a table with a summary breakdown of the costs of implementing Phase I of the Redding Area Anadromous Fish Enhancement Program.

Breakdown of Cost Estimates

Phase I Tasks	Direct Labor (hrs)	Direct Labor & Benefit Costs	Service Contracts	Total Costs
Site Availability Assessments			$18,000	$18,000
Water Quality & Availability			$22,000	$22,000
Gravel Inventory and Survey			$15,000	$15,000
Technology Review			$12,000	$12,000
Economic Feasibility			$25,000	$25,000
Preliminary Construction			$78,000	$78,000
Educational Opportunities			$15,000	$15,000
Feasibility Study Findings Report			$40,000	$40,000
Project Management	200	$15,000	$25,000	$40,000
TOTAL	200	$15,000	$250,000	$265,000

Notes:
1) The direct Labor and Benefits shown in Column 3 above are those costs estimated for City of Redding staff for contract management and oversight. These costs will be fully borne by Redding and are not to be funded by CALFED.
2) Overhead Labor, Material Acquisition, and other miscellaneous costs are included as part of the estimate for consulting services under Service Contracts.
3) The dollar amount for Service Contracts, as shown in Column 4, is the amount being requested for funding and support by CALFED.

Redding expects the Phase I feasibility analyses to be completed within six months from their start date. At this time, Redding has not specified the time requirements or limitations for each study or analysis of particular issues.

Redding estimates that these studies will require 2-3 full-time equivalent consultants and staff[2] to complete all of the tasks within the 6-month timeframe. Therefore, each of the first five tasks (Site Availability Assessments through Economic Analysis) listed above will be worked on concurrently and in parallel to ensure timely results. With the completion of these tasks, preliminary design criteria and drawings will be prepared, along with development of the educational opportunities that will be available from the potential sites.

Upon completion of each of these individual studies and analyses, Redding has allocated a portion of the estimated consultant time to the preparation of a report of the feasibility study's findings, conclusions, and recommendations. This is seen as a critical step in the Program, as the Phase I findings will be the basis for determining the long-term value of further development of an anadromous fish enhancement program in the Redding area.

Payments would only be made to the consultant(s) upon delivery and approval of the work product contracted for under each specific review or item.

[2] All City of Redding staff time, expenses and benefits will be provided by Redding and will not be funded by CALFED.

V. APPLICANT QUALIFICATIONS

The City of Redding is a municipal corporation, formed within the State of California. The City staff includes professionals with a broad range of experience. The principal staff liaison that is currently assigned to provide monitoring, support, and evaluation of the consultant contract work for the Redding Area Anadromous Fish Enhancement Program is Bryan Cope. Mr. Cope has more than 13 years experience as a Resource Planner and in contract management.

The technical studies will only be performed by companies who have substantial backgrounds and expertise in each of the critical areas.

- Economics
- Environmental Science
- Fisheries Biology
- Planning and Permitting
- Engineering Design
- Construction

The experience of the potential companies or individuals performing this work will be judged through the competitive procurement process. No individual or consulting firm has been predetermined or selected as the provider of the studies. Therefore, information on the qualifications of the individual(s) or firm(s) eventually selected to perform this work is unavailable at this time.

VI. COMPLIANCE WITH STANDARD FORMS AND CONDITIONS

Redding has reviewed the CALFED Nondiscrimination Compliance Statement and accepts all conditions and requirements thereto, to the extent they comply with and are in accordance with California Governmental Code Section 12900 et. seq. and California Code of Regulations pertaining thereto. Such compliance will be adhered to by any and all parties performing work for Redding on the proposed Redding Area Anadromous Fish Enhancement Program.

A blank copy of the nondiscrimination compliance statement is included in this proposal, as required by the CALFED RFP filing instructions. A blank copy has been attached because Redding has not yet chosen or contracted with any consultant or consultants for work on the proposed Redding Area Anadromous Fish Enhancement Program.

Item 8

NONDISCRIMINATION COMPLIANCE STATEMENT

COMPANY NAME

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, disability (including HIV and AIDS), medical condition (cancer), age, marital status, denial of family and medical care leave and denial of pregnancy disability leave.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME

DATE EXECUTED

EXECUTED IN THE COUNTY OF

PROSPECTIVE CONTRACTOR'S SIGNATURE

PROSPECTIVE CONTRACTOR'S TITLE

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME